**B V H Consulting Engineers**
Survey and Engineering Project Consultants

## BITUMEN EXTRACTION TEST [FIELD TEST]

***NAME OF WORK :*** Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub - Name of Work** : Improvements to Roads and drains near Chikka Muniyappa house at Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : 15/01/2018

| Tests on Bituminous Concrete | | | | |
|---|---|---|---|---|
| Test No 1 Time: | | Test | Test Time | 10.30 Am |
| Sample No | Initial Weight of the Mix [w1], in g | Weight of mix after extraction of Bitumen [w2], in g | Difference in weight, w=[w1-w2], in g | Percentage of Bitumen Extracted = [(w /w1)*100]-100, in % |
| 1 | 500 | 473 | 27 | 5.4 |
| 2 | 500 | 473 | 27 | 5.4 |
| Test No 2 Time: | | Test | Test Time: 2.30 pm | |
| Sample No | Initial Weight of the Mix [w1], in g | Weight of mix after extraction of Bitumen [w2], in g | Difference in weight, w=[w1-w2], in g | Percentage of Bitumen Extracted = [(w /w1)*100]-100, in % |
| 1 | 500 | 474 | 26 | 5.2 |
| 2 | 500 | 474 | 26 | 5.2 |

**Note:**

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory and the test carried out at the site.
3. Any Query regarding the report must be within 30 days from the date of testing.

AE(NZ)

#42/1, 6th Main Road, Jnanajyothi Nagara, Malathalli, Bangalore – 560 056.Tel: 080-23241948, Fax: 080 - 23240685, Cell : 9964339888 E-mail : mbnk2278@yahoo.com

# B V H Consulting Engineers

Survey and Engineering Project Consultants


## GRADIATION FOR WMM

## MORTH TABLE – 400 - 11

***NAME OF WORK:*** Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub-Name of road** : Improvements to Roads and Drains Adjacent to St. Johns school at Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**SAMPLE ID** : Adjacent road to St John's School&Road1 and road2

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing** : 06-01-2018

| IS Sieve Size in mm | Weight Retained (gms) | Cumulative Weight Retained (gms) | Cumulative % of Retained | Cumulative % of Passing | Specific Limits |
|---|---|---|---|---|---|
| 53 | 0 | 0 | 0 | 100 | 100 |
| 45 | 117 | 117 | 1.4 | 98.6 | 95-100 |
| 22.4 | 2514 | 2631 | 30.9 | 69.1 | 60-80 |
| 11.2 | 1478 | 4109 | 48.3 | 51.7 | 40-60 |
| 4.75 | 1352 | 5461 | 64.2 | 35.8 | 25-40 |
| 2.36 | 998 | 6459 | 75.9 | 24.1 | 15-30 |
| 0.600 | 945 | 7404 | 87.0 | 13.0 | 8-22 |
| 0.075 | 902 | 8306 | 97.6 | 2.4 | 0-8 |

**Note:**

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3. Any Query regarding the report must be within 30 days from the date of testing


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# B V H Consulting Engineers

Survey and Engineering Project Consultants


## Aggregate Impact Value (W.M.M.)

## IS : 2386 Part IV

***NAME OF WORK:*** Consultancy service for Project Management consultant for the works of package Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 byatarayanapura division as per annexure UDD 217 SFC 2016 dated 28.5.2016 for ward number 7.

**Sub-Name of road** : Improvements to Roads and Drains Adjacent to St. Johns school at Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division

**Client** : Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92

**Name of the Agency :** Benaka Developers & Projects Pvt. Ltd.

**SAMPLE ID** : Adjacent road to St John's School&Road1 and road2

**Reference:** Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

**Date of Testing** : 06-01-2018

| Sl. No | Details | Trial No. | | Average |
|---|---|---|---|---|
| | | 1 | 2 | |
| 1 | Total Weight of aggregate sample filling the cylindrical measure = $W_1$ g | 386 | 383 | |
| 2 | Weight of aggregate passing throw 2.36 mm IS sieve after the test = $W_2$ g | 89 | 85 | |
| 3 | Weight of aggregate retained 2.36 mm sieve after the test = $W_3$ g | 366 | 361 | |
| 4 | Aggregate Impact value = percent fine | 23.06 | 22.19 | 22.63 |
| | $100*(W_2/W_1)\%$ | | | |

**Comments:**

- **Maximum allaovable Aggregate Impact value for Wet Mix Macadam is 30%.**

**Note:**

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be within 30 days from the date of testing.

Asst Engr. U.D
AE(W2)


#42/1, 6th Main Road, Jnanajyothi Nagara, Malathalli, Bangalore – 560 056.Tel: 080-23241948, Fax: 080 - 23240685, Cell : 9964339888 E-mail : mbnk2278@yahoo.com

## Determination of Flakiness Index & Elongation Index of Coarse Aggregate.

***NAME OF WORK:*** Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub-Name Of Road** : Improvements to Roads and Drains Adjacent to St. Johns school at Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**SAMPLE ID** : Adjacent road to St John's School&Road1 and road2

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing** : 06-01-2018

**Result:** Flakiness Index = 12.32%.

Elongation Index = 13.63%.

**Result: Combined Flakiness & Elongation Index = 25.95%.**

**Comments:**

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%.

**Note:**

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be within 30 days from the date of testing.

AE(WT)

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# B V H Consulting Engineers

Survey and Engineering Project Consultants


## GRADIATION FOR WMM

## MORTH TABLE – 400 - 11

***NAME OF WORK:***Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub-Name of road** : Improvements to Roads and Drains Adjacent to St. Johns school at Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**SAMPLE ID** : Shriya residency cross roads Rhs 6&5

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing** : 05-01-2018

| IS Sieve Size in mm | Weight Retained (gms) | Cumulative Weight Retained (gms) | Cumulative % of Retained | Cumulative % of Passing | Specific Limits |
|---|---|---|---|---|---|
| 53 | 0 | 0 | 0 | 100 | 100 |
| 45 | 275 | 275 | 3.1 | 96.9 | 95-100 |
| 22.4 | 2665 | 2940 | 33.3 | 66.7 | 60-80 |
| 11.2 | 1345 | 4285 | 48.5 | 51.5 | 40-60 |
| 4.75 | 1290 | 5575 | 63.1 | 36.9 | 25-40 |
| 2.36 | 1025 | 6600 | 74.7 | 25.3 | 15-30 |
| 0.600 | 965 | 7565 | 85.6 | 14.4 | 8-22 |
| 0.075 | 940 | 8505 | 96.2 | 3.8 | 0-8 |

AE(P)

Assistant Executive Engineer
Kodigehalli Sub Division
Byatarayanapura Division

**Note:**

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3. Any Query regarding the report must be within 30 days from the date of testing

AE(NR)


#42/1, 6th Main Road, Jnanajyothi Nagara, Malathalli, Bangalore – 560 056.Tel: 080-23241948, Fax: 080 - 23240685, Cell : 9964339888 E-mail : mbnk2278@yahoo.com

# B V H Consulting Engineers

Survey and Engineering Project Consultants


## Aggregate Impact Value (W.M.M.)

## IS : 2386 Part IV

***NAME OF WORK:***Consultancy service for Project Management consultant for the works of package Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 byatarayanapura division as per annexure UDD 217 SFC 2016 dated 28.5.2016 for ward number 7.

**Sub-Name of road**: Improvements to Roads and Drains Adjacent to St. Johns school at Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**SAMPLE ID** : Shriya residency cross roads Rhs 6&5

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing** : 05-01-2018

| Sl. No | Details | Trial No. | | Average |
|---|---|---|---|---|
| | | 1 | 2 | |
| 1 | Total Weight of aggregate sample filling the cylindrical measure = $W_1$ g | 385 | 383 | |
| 2 | Weight of aggregate passing throw 2.36 mm IS sieve after the test = $W_2$ g | 86 | 84 | |
| 3 | Weight of aggregate retained 2.36 mm sieve after the test = $W_3$ g | 365 | 363 | |
| 4 | Aggregate Impact value = percent fine | 21.52 | 21.93 | 21.73 |
| | $100*(W_2/W_1)\%$ | | | |

**Comments:**

- **Maximum allaovable Aggregate Impact value for Wet Mix Macadam is 30%.**

**Note:**

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be within 30 days from the date of testing.

A6457 Assistant Executive Engineer Kodigehalli Bruhat Bangalore

AE (W7)


#42/1, 6th Main Road, Jnanajyothi Nagara, Malathalli, Bangalore – 560 056.Tel: 080-23241948, Fax: 080 - 23240685, Cell : 9964339888 E-mail : mbnk2278@yahoo.com

## Determination of Flakiness Index & Elongation Index of Coarse Aggregate.

***NAME OF WORK:***Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub-Name Of Road** : Improvements to Roads and Drains Adjacent to St. Johns school at Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**SAMPLE ID** : Shriya residency cross roads Rhs 6&5

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing** : 05-01-2018

**Result:** Flakiness Index = 12.32%.

Elongation Index = 13.63%.

**Result:Combined Flakiness & Elongation Index = 25.95%.**

**Comments:**

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%.

**Note:**

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AE(W2)

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**B V H Consulting Engineers**
Survey and Engineering Project Consultants

## GRADIATION FOR WMM

## MORTH TABLE – 400 - 11

***NAME OF WORK:*** Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub-Name of road** : Improvements to Roads and Drains Adjacent to St. Johns school at Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**SAMPLE ID** : Shriya residency cross roads Rhs 3&4

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing** : 05-01-2018

| IS Sieve Size in mm | Weight Retained (gms) | Cumulative Weight Retained (gms) | Cumulative % of Retained | Cumulative % of Passing | Specific Limits |
|---|---|---|---|---|---|
| 53 | 0 | 0 | 0 | 100 | 100 |
| 45 | 235 | 235 | 2.6 | 97.4 | 95-100 |
| 22.4 | 2678 | 2913 | 32.5 | 67.5 | 60-80 |
| 11.2 | 1585 | 4498 | 50.2 | 49.8 | 40-60 |
| 4.75 | 1345 | 5843 | 65.2 | 34.8 | 25-40 |
| 2.36 | 998 | 6841 | 76.4 | 23.6 | 15-30 |
| 0.600 | 962 | 7803 | 87.1 | 12.9 | 8-22 |
| 0.075 | 956 | 8759 | 97.8 | 2.2 | 0-8 |

**Note:**

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AE(WS)

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# B V H Consulting Engineers

Survey and Engineering Project Consultants


## Aggregate Impact Value (W.M.M.)

## IS : 2386 Part IV

***NAME OF WORK:*** Consultancy service for Project Management consultant for the works of package Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 byatarayanapura division as per annexure UDD 217 SFC 2016 dated 28.5.2016 for ward number 7.

**Sub-Name of road** : Improvements to Roads and Drains Adjacent to St. Johns school at Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**SAMPLE ID** : Shriya residency cross roads Rhs 3&4

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing** : 05-01-2018

| Sl. No | Details | Trial No. | | Average |
|---|---|---|---|---|
| | | 1 | 2 | |
| 1 | Total Weight of aggregate sample filling the cylindrical measure = $W_1$ g | 388 | 385 | |
| 2 | Weight of aggregate passing throw 2.36 mm IS sieve after the test = $W_2$ g | 89 | 86 | |
| 3 | Weight of aggregate retained 2.36 mm sieve after the test = $W_3$ g | 355 | 358 | |
| 4 | Aggregate Impact value = percent fine | 22.94 | 22.34 | 22.64 |
| | $100*(W_2/W_1)\%$ | | | |

**Comments:**

- **Maximum allaovable Aggregate Impact value for Wet Mix Macadam is 30%.**

**Note:**

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## Determination of Flakiness Index & Elongation Index of Coarse Aggregate.

***NAME OF WORK:*** Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub-Name Of Road**: Improvements to Roads and Drains Adjacent to St. Johns school at Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**SAMPLE ID** : Shriya residency cross roads Rhs 3&4

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing** : 05-01-2018

**Result:** Flakiness Index = 11.58%.

Elongation Index = 13.58%.

**Result: Combined Flakiness & Elongation Index = 25.16%.**

**Comments:**

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%.

**Note:**

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3. Any Query regarding the report must be within 30 days from the date of testing.

Assistant Executive Engineer
Kodigehalli

AE(WT)

# B V H Consulting Engineers

Survey and Engineering Project Consultants


## GRADIATION FOR WMM

## MORTH TABLE – 400 - 11

***NAME OF WORK:***Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub-Name of road** : Improvements to Roads and Drains Adjacent to St. Johns school at Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

**Client** : Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92

**Name of the Agency :** Benaka Developers & Projects Pvt. Ltd.

**SAMPLE ID** :Shriya residency cross roads Rhs 1&2

**Reference:** Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

**Date of Testing** : 06-01-2018

| IS Sieve Size in mm | Weight Retained (gms) | Cumulative Weight Retained (gms) | Cumulative % of Retained | Cumulative % of Passing | Specific Limits |
|---|---|---|---|---|---|
| 53 | 0 | 0 | 0 | 100 | 100 |
| 45 | 235 | 235 | 2.8 | 97.2 | 95-100 |
| 22.4 | 2565 | 2800 | 32.9 | 67.1 | 60-80 |
| 11.2 | 1295 | 4095 | 48.1 | 51.9 | 40-60 |
| 4.75 | 1225 | 5320 | 62.4 | 37.6 | 25-40 |
| 2.36 | 995 | 6315 | 74.1 | 25.9 | 15-30 |
| 0.600 | 945 | 7260 | 85.2 | 14.8 | 8-22 |
| 0.075 | 915 | 8175 | 96.0 | 4.0 | 0-8 |

Assistant Engineer
Kodigehalli Sub Division
Byatarayanapura

**Note:**

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AE(ws)


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# B V H Consulting Engineers

Survey and Engineering Project Consultants


## Aggregate Impact Value (W.M.M.)

## IS : 2386 Part IV

***NAME OF WORK:***Consultancy service for Project Management consultant for the works of package Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 byatarayanapura division as per annexure UDD 217 SFC 2016 dated 28.5.2016 for ward number 7.

**Sub-Name of road**: Improvements to Roads and Drains Adjacent to St. Johns school at Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**SAMPLE ID** :Shriya residency cross roads Rhs 1&2

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing** : 06-01-2018

| Sl. No | Details | Trial No. | | Average |
|---|---|---|---|---|
| | | 1 | 2 | |
| 1 | Total Weight of aggregate sample filling the cylindrical measure = $W_1$ g | 385 | 383 | |
| 2 | Weight of aggregate passing throw 2.36 mm IS sieve after the test = $W_2$ g | 86 | 84 | |
| 3 | Weight of aggregate retained 2.36 mm sieve after the test = $W_3$ g | 365 | 363 | |
| 4 | Aggregate Impact value = percent fine | 21.52 | 21.93 | 21.73 |
| | $100*(W_2/W_1)\%$ | | | |

**Comments:**

- **Maximum allaovable Aggregate Impact value for Wet Mix Macadam is 30%.**

**Note:**

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
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3. Any Query regarding the report must be within 30 days from the date of testing.

AE(QC)


#42/1, 6th Main Road, Jnanajyothi Nagara, Malathalli, Bangalore – 560 056.Tel: 080-23241948, Fax: 080 - 23240685, Cell : 9964339888 E-mail : mbnk2278@yahoo.com

## Determination of Flakiness Index & Elongation Index of Coarse Aggregate.

***NAME OF WORK:***Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub-Name Of Road** : Improvements to Roads and Drains Adjacent to St. Johns school at Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**SAMPLE ID** :Shriya residency cross roads Rhs 1&2

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing** : 06-01-2018

**Result:** Flakiness Index = 11.53%.

Elongation Index = 13.24%.

**Result: Combined Flakiness & Elongation Index = 24.77%.**

**Comments:**

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%.

**Note:**

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3. Any Query regarding the report must be within 30 days from the date of testing.

AE (W7)

**B V H Consulting Engineers**
Survey and Engineering Project Consultants

## TEST FOR PRIME COAT

***NAME OF WORK :*** Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub - Name of Work** : Improvements to Roads and Drains Adjacent to St. Johns school at Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing** : 19-01-2018

| Determination | Unit | Trial no. | |
|---|---|---|---|
| Size of tray in ( sqm) | | 0.45x0.45 | 0.45x0.45 |
| Area of tray (a) | Sqm | 0.2025 | 0.2025 |
| Initial Wt of empty tray(b) | Kg | 1.625 | 1.627 |
| Final Wt of tray with prime coat (c ) | Kg | 1.760 | 1.750 |
| Weight of Prime coat (d=c-b) | Kg | 0.1350 | 0.1230 |
| Rate of Spray of prime coat | Kg/Sqm | 0.667 | 0.607 |
| Average | Kg/Sqm | 0.637 | |
| Specified Limit | Kg/Sqm | 0.60 Kg/sqm | |

AE.W

Assistant Engineer
Division
Bruhat Bangalore Mahanagara Palike
Bangalore-560 002

**Note:**

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AE(W)

#42/1, 6th Main Road, Jnanajyothi Nagara, Malathalli, Bangalore – 560 056.Tel: 080-23241948, Fax: 080 - 23240685, Cell : 9964339888 E-mail : mbnk2278@yahoo.com

# B V H Consulting Engineers

Survey and Engineering Project Consultants


## TEST FOR TACK COAT

***NAME OF WORK :*** Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub - Name of Work** : Improvements to Roads and Drains Adjacent to St. Johns school at Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing** : 19-01-2018

| Tray no. | 1 | 2 |
|---|---|---|
| Weight of the tray(b)gms | 1688 | 1688 |
| Weight of the tray with prime(a)gms | 1714 | 1713 |
| Weight of prime(a-b)gms | 26 | 25 |
| Tray area (sqm) | 300*300=0.09sqm | 300*300=0.09sqm |
| Rate of spray (kg/sqm) | 0.026/0.09=0.29 kg/sqm | 0.025/0.09=0.27 kg/sqm |
| Avg. Rate of spray (kg/sqm) | 0.28 | |

Specified rate as per Specification: 0.25 Kg/sqm

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Assistant Executive Engineer
Kodigehalli Sub Division
Bruhat Bangalore Mahanagara Palike

AE(WC)


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# B V H Consulting Engineers

Survey and Engineering Project Consultants


## BITUMEN EXTRACTION TEST [FIELD TEST]

***NAME OF WORK :*** Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub - Name of Work** : Improvements to Roads and Drains Adjacent to St. Johns school at Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

**Client** : Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92

**Name of the Agency :** Benaka Developers & Projects Pvt. Ltd.

**Reference:** Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

**Date of Testing** : 19-01-2018

| Tests on Bituminous Concrete | | | | |
|---|---|---|---|---|
| **Test No 1** **Time:** | | **Test** | **Test Time** | **11.00 AM** |
| **Sample No** | **Initial Weight of the Mix [w1], in g** | **Weight of mix after extraction of Bitumen [w2], in g** | **Difference in weight, w=[w1-w2], in g** | **Percentage of Bitumen Extracted = [(w /w1)*100]-100, in %** |
| 1 | 500 | 473 | 27 | 5.4 |
| 2 | 500 | 473 | 27 | 5.4 |
| **Test No 2** **Time:** | | **Test** | **Test Time: 3.00 pm** | |
| **Sample No** | **Initial Weight of the Mix [w1], in g** | **Weight of mix after extraction of Bitumen [w2], in g** | **Difference in weight, w=[w1-w2], in g** | **Percentage of Bitumen Extracted = [(w /w1)*100]-100, in %** |
| 1 | 500 | 474 | 26 | 5.2 |
| 2 | 500 | 474 | 26 | 5.2 |

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AE(LT)


#42/1, 6th Main Road, Jnanajyothi Nagara, Malathalli, Bangalore – 560 056.Tel: 080-23241948, Fax: 080 - 23240685, Cell : 9964339888 E-mail : mbnk2278@yahoo.com

**B V H Consulting Engineers**
Survey and Engineering Project Consultants

## GRADIATION FOR WMM

## MORTH TABLE – 400 - 11

***NAME OF WORK:***Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub-Name of road** : Improvements to Roads and drains in front of Shriya Residency Near Old Police Station Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**SAMPLE ID** :Varadaraju Layout Main road

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing** : 03-01-2018

| IS Sieve Size in mm | Weight Retained (gms) | Cumulative Weight Retained (gms) | Cumulative % of Retained | Cumulative % of Passing | Specific Limits |
|---|---|---|---|---|---|
| 53 | 0 | 0 | 0 | 100 | 100 |
| 45 | 235 | 235 | 2.8 | 97.2 | 95-100 |
| 22.4 | 2565 | 2800 | 32.9 | 67.1 | 60-80 |
| 11.2 | 1295 | 4095 | 48.1 | 51.9 | 40-60 |
| 4.75 | 1225 | 5320 | 62.4 | 37.6 | 25-40 |
| 2.36 | 995 | 6315 | 74.1 | 25.9 | 15-30 |
| 0.600 | 945 | 7260 | 85.2 | 14.8 | 8-22 |
| 0.075 | 915 | 8175 | 96.0 | 4.0 | 0-8 |

**Note:**

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Assistant Engineer
Kodigehalli Sub Division
Bruhat Bangalore Mahanagara Palike
Bangalore-92

AE(Civil)

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## Aggregate Impact Value (W.M.M.)

## IS : 2386 Part IV

***NAME OF WORK:***Consultancy service for Project Management consultant for the works of package Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 byatarayanapura division as per annexure UDD 217 SFC 2016 dated 28.5.2016 for ward number 7.

**Sub-Name of road**: Improvements to Roads and drains in front of Shriya Residency Near Old Police Station Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.**Client**

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**SAMPLE ID** :Varadaraju Layout Main road

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing** : 03-01-2018

| Sl. No | Details | Trial No. | | Average |
|---|---|---|---|---|
| | | 1 | 2 | |
| 1 | Total Weight of aggregate sample filling the cylindrical measure = $W_1$ g | 381 | 383 | |
| 2 | Weight of aggregate passing throw 2.36 mm IS sieve after the test = $W_2$ g | 82 | 84 | |
| 3 | Weight of aggregate retained 2.36 mm sieve after the test = $W_3$ g | 365 | 363 | |
| 4 | Aggregate Impact value = percent fine | 21.52 | 21.93 | 21.73 |
| | $100*(W_2/W_1)\%$ | | | |

**Comments:**

- **Maximum allaovable Aggregate Impact value for Wet Mix Macadam is 30%.**

**Note:**

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3. Any Query regarding the report must be within 30 days from the date of testing.

Assistant Executive Engineer
Bruhat Bangalore Mahanagara Palike

AE(WZ)

#42/1, 6th Main Road, Jnanajyothi Nagara, Malathalli, Bangalore – 560 056.Tel: 080-23241948, Fax: 080 - 23240685, Cell : 9964339888 E-mail : mbnk2278@yahoo.com

## Determination of Flakiness Index & Elongation Index of Coarse Aggregate.

***NAME OF WORK:***Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub-Name Of Road** Improvements to Roads and drains in front of Shriya Residency Near Old Police Station Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.**Client**

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**SAMPLE ID** :Varadaraju Layout Main road

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing** : 03-01-2018

**Result:** Flakiness Index = 11.53%.

Elongation Index = 13.24%.

**Result: Combined Flakiness & Elongation Index = 24.77%.**

**Comments:**

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%.

**Note:**

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Assistant Engineer
Kodigehalli
Bruhat Bangalore Mahanagara Palike
Bangalore

A.E.(Lab)

**B V H Consulting Engineers**
Survey and Engineering Project Consultants

## GRADIATION FOR WMM

## MORTH TABLE – 400 - 11

***NAME OF WORK:***Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub-Name of road** : Improvements to Roads and drains in front of Shriya Residency Near Old Police Station Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**SAMPLE ID** :Varadaraju Layout Main road

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing** : 04-01-2018

| IS Sieve Size in mm | Weight Retained (gms) | Cumulative Weight Retained (gms) | Cumulative % of Retained | Cumulative % of Passing | Specific Limits |
|---|---|---|---|---|---|
| 53 | 0 | 0 | 0 | 100 | 100 |
| 45 | 275 | 275 | 3.1 | 96.9 | 95-100 |
| 22.4 | 2665 | 2940 | 33.3 | 66.7 | 60-80 |
| 11.2 | 1345 | 4285 | 48.5 | 51.5 | 40-60 |
| 4.75 | 1290 | 5575 | 63.1 | 36.9 | 25-40 |
| 2.36 | 1025 | 6600 | 74.7 | 25.3 | 15-30 |
| 0.600 | 965 | 7565 | 85.6 | 14.4 | 8-22 |
| 0.075 | 940 | 8505 | 96.2 | 3.8 | 0-8 |

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Assistant Executive Engineer
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Bangalore - 560 092

AE(WZ)

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## Aggregate Impact Value (W.M.M.)

## IS : 2386 Part IV

***NAME OF WORK:***Consultancy service for Project Management consultant for the works of package Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 byatarayanapura division as per annexure UDD 217 SFC 2016 dated 28.5.2016 for ward number 7.

**Sub-Name of road**:Improvements to Roads and drains in front of Shriya Residency Near Old Police Station Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.**Client**

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**SAMPLE ID** :Varadaraju Layout Main road

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing** : 04-01-2018

| Sl. No | Details | Trial No. | | Average |
|---|---|---|---|---|
| | | 1 | 2 | |
| 1 | Total Weight of aggregate sample filling the cylindrical measure = $W_1$ g | 386 | 383 | |
| 2 | Weight of aggregate passing throw 2.36 mm IS sieve after the test = $W_2$ g | 89 | 85 | |
| 3 | Weight of aggregate retained 2.36 mm sieve after the test = $W_3$ g | 366 | 361 | |
| 4 | Aggregate Impact value = percent fine | 23.06 | 22.19 | 22.63 |
| | $100*(W_2/W_1)\%$ | | | |

**Comments:**

- **Maximum allaovable Aggregate Impact value for Wet Mix Macadam is 30%.**

**Note:**

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AE(QC)

## Determination of Flakiness Index & Elongation Index of Coarse Aggregate.

***NAME OF WORK:***Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub-Name Of Road** : Improvements to Roads and drains in front of Shriya Residency Near Old Police Station Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.**Client**

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**SAMPLE ID** :Varadaraju Layout Main road

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing** : 04-01-2018

**Result:** Flakiness Index = 12.32%.

Elongation Index = 13.63%.

**Result:Combined Flakiness & Elongation Index = 25.95%.**

**Comments:**

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%.

**Note:**

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Assistant Executive Engineer
Kodigehalli Sub Division
Bangalore

AE(Acts)

**B V H Consulting Engineers**
Survey and Engineering Project Consultants

## GRADIATION FOR WMM

## MORTH TABLE – 400 - 11

*NAME OF WORK:*Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub-Name of road** : Improvements to Roads and drains in front of Shriya Residency Near Old Police Station Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

Client : Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

SAMPLE ID :Varadaraju Layout Main road cross road LHS

Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Date of Testing : 04-01-2018

| IS Sieve Size in mm | Weight Retained (gms) | Cumulative Weight Retained (gms) | Cumulative % of Retained | Cumulative % of Passing | Specific Limits |
|---|---|---|---|---|---|
| 53 | 0 | 0 | 0 | 100 | 100 |
| 45 | 235 | 235 | 2.6 | 97.4 | 95-100 |
| 22.4 | 2678 | 2913 | 32.5 | 67.5 | 60-80 |
| 11.2 | 1585 | 4498 | 50.2 | 49.8 | 40-60 |
| 4.75 | 1345 | 5843 | 65.2 | 34.8 | 25-40 |
| 2.36 | 998 | 6841 | 76.4 | 23.6 | 15-30 |
| 0.600 | 962 | 7803 | 87.1 | 12.9 | 8-22 |
| 0.075 | 956 | 8759 | 97.8 | 2.2 | 0-8 |

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**B V H Consulting Engineers**
Survey and Engineering Project Consultants

## Aggregate Impact Value (W.M.M.)

## IS : 2386 Part IV

***NAME OF WORK:***Consultancy service for Project Management consultant for the works of package Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 byatarayanapura division as per annexure UDD 217 SFC 2016 dated 28.5.2016 for ward number 7.

**Sub-Name of road**: : Improvements to Roads and drains in front of Shriya Residency Near Old Police Station Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.**Client**

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**SAMPLE ID** :Varadaraju Layout Main road cross road LHS

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing** : 04-01-2018

| Sl. No | Details | Trial No. | | Average |
|---|---|---|---|---|
| | | 1 | 2 | |
| 1 | Total Weight of aggregate sample filling the cylindrical measure = $W_1$ g | 388 | 385 | |
| 2 | Weight of aggregate passing throw 2.36 mm IS sieve after the test = $W_2$ g | 89 | 86 | |
| 3 | Weight of aggregate retained 2.36 mm sieve after the test = $W_3$ g | 355 | 358 | |
| 4 | Aggregate Impact value = percent fine | 22.94 | 22.34 | 22.64 |
| | $100*(W_2/W_1)\%$ | | | |

**Comments:**

- **Maximum allaovable Aggregate Impact value for Wet Mix Macadam is 30%.**

Assistant Executive Engineer
Kodigehalli Sub Division
Bruhat Bangalore Mahanagara Palike
Bangalore

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B V H Consulting Engineers Bangalore

A.E(Qty)

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## Determination of Flakiness Index & Elongation Index of Coarse Aggregate.

***NAME OF WORK:***Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub-Name Of Road** : Improvements to Roads and drains in front of Shriya Residency Near Old Police Station Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.**Client**

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**SAMPLE ID** :Varadaraju Layout Main road cross road LHS

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing** : 04-01-2018

**Result:** Flakiness Index = 12.32%.

Elongation Index = 13.63%.

**Result:Combined Flakiness & Elongation Index = 25.95%.**

**Comments:**

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%.

**Note:**

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Assistant Executive Engineer
Kodigehalli Sub Division
Yuhat Bangalore Palike
Bangalore

AE(W)

**B V H Consulting Engineers**
Survey and Engineering Project Consultants

## TEST FOR PRIME COAT

***NAME OF WORK:***Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub - Name of Work** : Improvements to Roads and drains in front of Shriya Residency Near Old Police Station Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

**Client : Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing:** 15/01/2018

| Determination | Unit | Trial no. | |
|---|---|---|---|
| Size of tray in ( sqm) | | 0.45x0.45 | 0.45x0.45 |
| Area of tray (a) | Sqm | 0.2025 | 0.2025 |
| Initial Wt of empty tray(b) | Kg | 1.625 | 1.627 |
| Final Wt of tray with prime coat (c ) | Kg | 1.760 | 1.750 |
| Weight of Prime coat (d=c-b) | Kg | 0.1350 | 0.1230 |
| Rate of Spray of prime coat | Kg/Sqm | 0.667 | 0.607 |
| Average | Kg/Sqm | 0.637 | |
| Specified Limit | Kg/Sqm | 0.60 Kg/sqm | |

**Note:**

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
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3. Any Query regarding the report must be within 30 days from the date of testing.

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AE(W)

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# TEST FOR PRIME COAT

***NAME OF WORK :*** Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub - Name of Work:** Improvements to Roads and drains in front of Shriya Residency Near Old Police Station Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

**Client :Executive EngineerByatarayanapura Division,NO.2152/20,Defence colony, sahakara Nagara,Banglore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**Reference**: AgreementNO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

**Date of Testing:** 15/01/2018

| Determination | Unit | Trial no. | |
|---|---|---|---|
| Size of tray in ( sqm) | | 0.45x0.45 | 0.45x0.45 |
| Area of tray (a) | Sqm | 0.2025 | 0.2025 |
| Initial Wt of empty tray(b) | Kg | 1.625 | 1.627 |
| Final Wt of tray with prime coat (c ) | Kg | 1.764 | 1.758 |
| Weight of Prime coat (d=c-b) | Kg | 0.1390 | 0.1310 |
| Rate of Spray of prime coat | Kg/Sqm | 0.686 | 0.646 |
| Average | Kg/Sqm | 0.666 | |
| Specified Limit | Kg/Sqm | 0.60 Kg/sqm | |

Assistant Executive Engineer
Kodigehalli Sub Division
Bruhat Bangalore Mahanagara Palike
Bangalore-92

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B.V.H. Consultants Bangalore

AE(QC)

#42/1, 6th Main Road, Jnanajyothi Nagara, Malathalli, Bangalore – 560 056.Tel: 080-23241948, Fax: 080 - 23240685, Cell : 9964339888 E-mail : mbnk2278@yahoo.com

## TEST FOR TACK COAT

***NAME OF WORK:***Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub - Name of Work** : Improvements to Roads and drains in front of Shriya Residency Near Old Police Station Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

**Client** : **Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018**

**Date of Testing:** 16/01/2018

| Tray no. | 1 | 2 |
|---|---|---|
| Weight of the tray(b)gms | 1688 | 1688 |
| Weight of the tray with prime(a)gms | 1712.8 | 1714 |
| Weight of prime(a-b)gms | 24.8 | 26 |
| Tray area (sqm) | 300*300=0.09sqm | 300*300=0.09sqm |
| Rate of spray (kg/sqm) | 0.0248/0.09=0.27 kg/sqm | 0.025/0.09=0.29 kg/sqm |
| Avg. Rate of spray (kg/sqm) | 0.28 | |

Specified rate as per Specification: 0.25 Kg/sqm

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Assistant Executive Engineer
Kodigehalli
Bruhat Bangalore Mahanagara Palike

AE(W7)

# TEST FOR TACK COAT

***NAME OF WORK :*** Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub - Name of Work**: Improvements to Roads and drains in front of Shriya Residency Near Old Police Station Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

**Client :Executive EngineerByatarayanapura Division,NO.2152/20,Defence colony, sahakara Nagara,Banglore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**Reference**: AgreementNO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

**Date of Testing:** 20/01/2018

| Tray no. | 1 | 2 |
|---|---|---|
| Weight of the tray(b)gms | 1688 | 1688 |
| Weight of the tray with prime(a)gms | 1713.5 | 1713 |
| Weight of prime(a-b)gms | 25.5 | 25 |
| Tray area (sqm) | 300*300=0.09sqm | 300*300=0.09sqm |
| Rate of spray (kg/sqm) | 0.0255/0.09=0.28 kg/sqm | 0.025/0.09=0.27 kg/sqm |
| Avg. Rate of spray (kg/sqm) | 0.275 | |

Specified rate as per Specification: 0.25 Kg/sqm

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**B V H Consulting Engineers**
Survey and Engineering Project Consultants

## BITUMEN EXTRACTION TEST [FIELD TEST]

***NAME OF WORK:***Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub - Name of Work** : Improvements to Roads and drains in front of Shriya Residency Near Old Police Station Amruthahalli in ward No.07 - Byatarayanapura, Kodigehalli Sub Division.

**Client** : Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92

**Name of the Agency :** Benaka Developers & Projects Pvt. Ltd.

**Reference:** Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

**Date of Testing:** 16/01/2018

| Tests on Dense graded Bituminous Macadam | | | | |
|---|---|---|---|---|
| **Test No 1** **TestTime:** | | | **Test Time** | **10.00 am** |
| **Sample No** | **Initial Weight of the Mix [w1], in g** | **Weight of mix after extraction of Bitumen [w2], in g** | **Difference in weight, w=[w1-w2], in g** | **Percentage of Bitumen Extracted = [(w /w1)*100]-100, in %** |
| 1 | 500 | 474 | 26 | 5.2 |
| 2 | 500 | 474 | 26 | 5.2 |
| **Test No 2** **Time:** | | **Test** | **Test Time: 3.00 pm** | |
| **Sample No** | **Initial Weight of the Mix [w1], in g** | **Weight of mix after extraction of Bitumen [w2], in g** | **Difference in weight, w=[w1-w2], in g** | **Percentage of Bitumen Extracted = [(w /w1)*100]-100, in %** |
| 1 | 500 | 475 | 25 | 5.0 |
| 2 | 500 | 475 | 25 | 5.0 |

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# B V H Consulting Engineers

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## BITUMEN EXTRACTION TEST [FIELD TEST]

***NAME OF WORK :*** Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7& 8Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

**Sub - Name of Work**: Improvements to Roads and drains in front of Shriya Residency Near Old Police Station Amruthahalli in ward No 07 - Byatarayanapura, Kodigehalli Sub Division.

**Client :Executive EngineerByatarayanapura Division,NO.2152/20,Defence colony, sahakara Nagara,Banglore-92**

**Name of the Agency : Benaka Developers & Projects Pvt. Ltd.**

**Reference**: AgreementNO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

**Date of Testing:** 20/01/2018

| Tests on Bituminous Concrete | | | | |
|---|---|---|---|---|
| **Test No 1 Time:** | | **Test** | **Test Time** | **11.00 pm** |
| **Sample No** | **Initial Weight of the Mix [w1], in g** | **Weight of mix after extraction of Bitumen [w2], in g** | **Difference in weight, w=[w1-w2], in g** | **Percentage of Bitumen Extracted = [(w /w1)*100]-100, in %** |
| 1 | 500 | 473 | 27 | 5.4 |
| 2 | 500 | 473 | 27 | 5.4 |
| **Test No 2 Time:** | | **Test** | **Test Time: 2.30 pm** | |
| **Sample No** | **Initial Weight of the Mix [w1], in g** | **Weight of mix after extraction of Bitumen [w2], in g** | **Difference in weight, w=[w1-w2], in g** | **Percentage of Bitumen Extracted = [(w /w1)*100]-100, in %** |
| 1 | 500 | 474 | 26 | 5.2 |
| 2 | 500 | 474 | 26 | 5.2 |

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